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Modelling a Methods and Tools Catalogue compliant with Official Statistics standards

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Outline

- ✓ Statistical Standards Overview
- ✓ Modelling the Business Process, Service and Tools
- ✓ Example of Business Process implementation
- ✓ Modelling a Business Process
- ✓ Process Design and Functionality execution
- ✓ Conclusions and lessons learned

Statistical Standards Overview 1/4

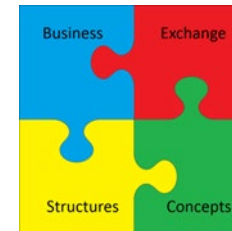
- ✓ Reuse of available statistical tools and software solutions
- ✓ Standardization and reproducibility of statistical process steps
- ✓ Harmonization of statistical output, both within and between National Statistical Institutes (NSIs)
- ✓ Increase of interoperability in terms of data and metadata management and sharing

The diagram shows a process flow for GSBPM with columns: Specify needs, Design, Build, Collect, Process, Analyse, Disseminate, Evaluate. Each column contains numbered steps (e.g., 1.1, 1.2, 1.3) and their descriptions.

GSBPM



CSPA



GSIM

The diagram shows a multi-layered framework for GAMSO. Layers from top to bottom: Strategy & Leadership (Define vision, Govern & lead, Manage strategic collaboration & cooperation); Capability Development (Data, Quality, Metadata, etc.); Corporate Support (Strategy, Finance, etc.); Production (Generic Statistical Business Process Model).

GAMSO

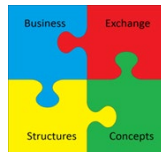
Statistical Standards Overview 2/4

Outsourcing Processes						
Identify needs	Design	Build	Control	Monitor	Evaluate	Release
1.1 Identify needs	1.2 Design	1.3 Build	1.4 Control	1.5 Monitor	1.6 Evaluate	1.7 Release
1.1.1 Identify needs	1.1.2 Design	1.1.3 Build	1.1.4 Control	1.1.5 Monitor	1.1.6 Evaluate	1.1.7 Release
1.1.1.1 Identify needs	1.1.1.2 Design	1.1.1.3 Build	1.1.1.4 Control	1.1.1.5 Monitor	1.1.1.6 Evaluate	1.1.1.7 Release
1.1.1.1.1 Identify needs	1.1.1.1.2 Design	1.1.1.1.3 Build	1.1.1.1.4 Control	1.1.1.1.5 Monitor	1.1.1.1.6 Evaluate	1.1.1.1.7 Release
1.1.1.1.1.1 Identify needs	1.1.1.1.1.2 Design	1.1.1.1.1.3 Build	1.1.1.1.1.4 Control	1.1.1.1.1.5 Monitor	1.1.1.1.1.6 Evaluate	1.1.1.1.1.7 Release

GSBPM



- Describe statistics production in process-oriented way
- Define business level core logic



GSIM



- Model data and metadata
- Connect services
- Enhance service reuse



CSPA



- Match statistical services and process phases, documenting statistical services in a standard way
- Ease services exchange and reuse

Strategy & Leadership	
Define vision	Manage strategic collaboration & cooperation
Govern & lead	
Corporate Support	
Capability Development	
Production	
Generic Statistical Business Process Model	

GAMSO



- Describes activities within an organization.
- Supports and Extends GSBPM Model

Statistical Standards Overview 3/4

Main goal of Core Ontology and related workgroups

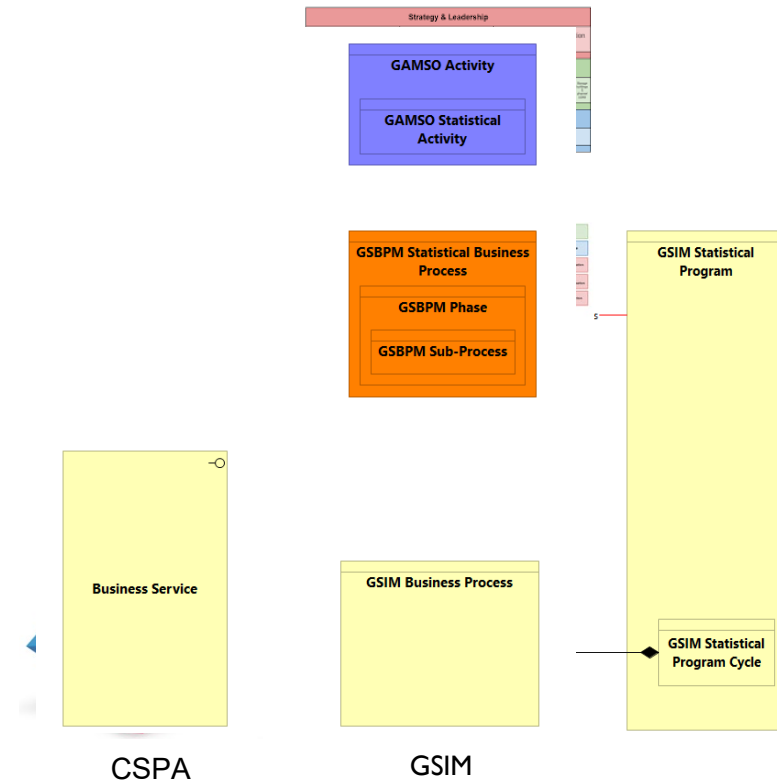
- ✓ Point out context with recurring concepts related to statistical production in several standard models
- ✓ **Harmonize** vocabulary for **interoperability**
- ✓ Create a **single framework** for metadata driven application components and **interoperability**

Statistical Standards Overview 4/4

Core Ontology as a bridge for Standards Interoperability

- ✓ Analyse Model contexts
- ✓ Point out key concepts
- ✓ Connect matching concepts
- ✓ Add other model related concepts

Official statistics standard harmonisation

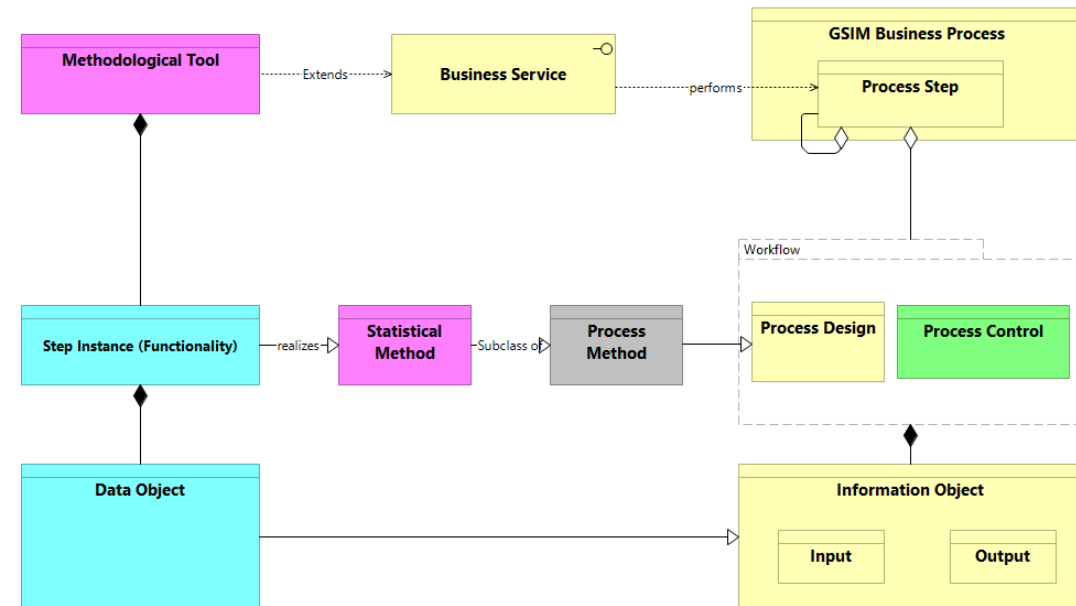


Modelling the Business Process, Service and Tools 1/3

Adding GSIM Concepts in the model to better describe a Business Process:

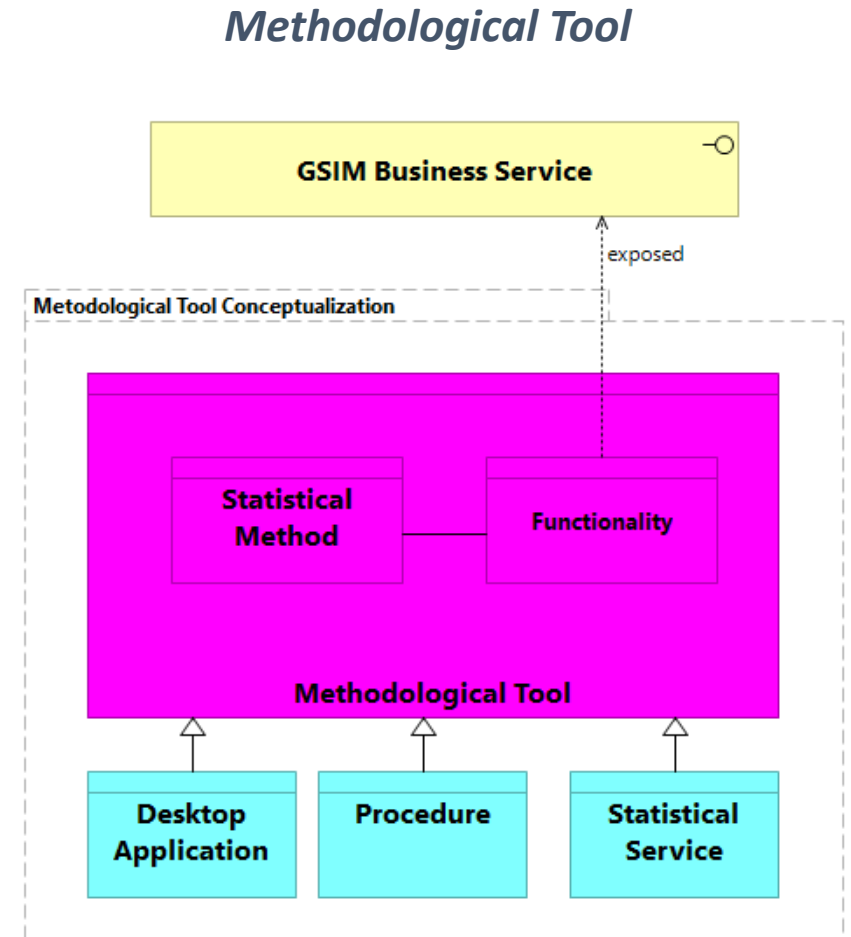
- Business function specifies the objective
- Business Service has a list of tools to perform a set of tasks
- Business Process specifies which processes, components, black boxes perform the task
- Process Step specifies the single instructions the components will apply
- Process design specifies an application of the step with a method
- Step Instance will actually issue a command
- Process Control performs conditional flow
- Process Method describes application rules and information domain
- Methodological Tool extends services
- Statistical Method extends method by describing statistics

Business Process + Tool and Method



Modelling the Business Process, Service and Tools 2/3

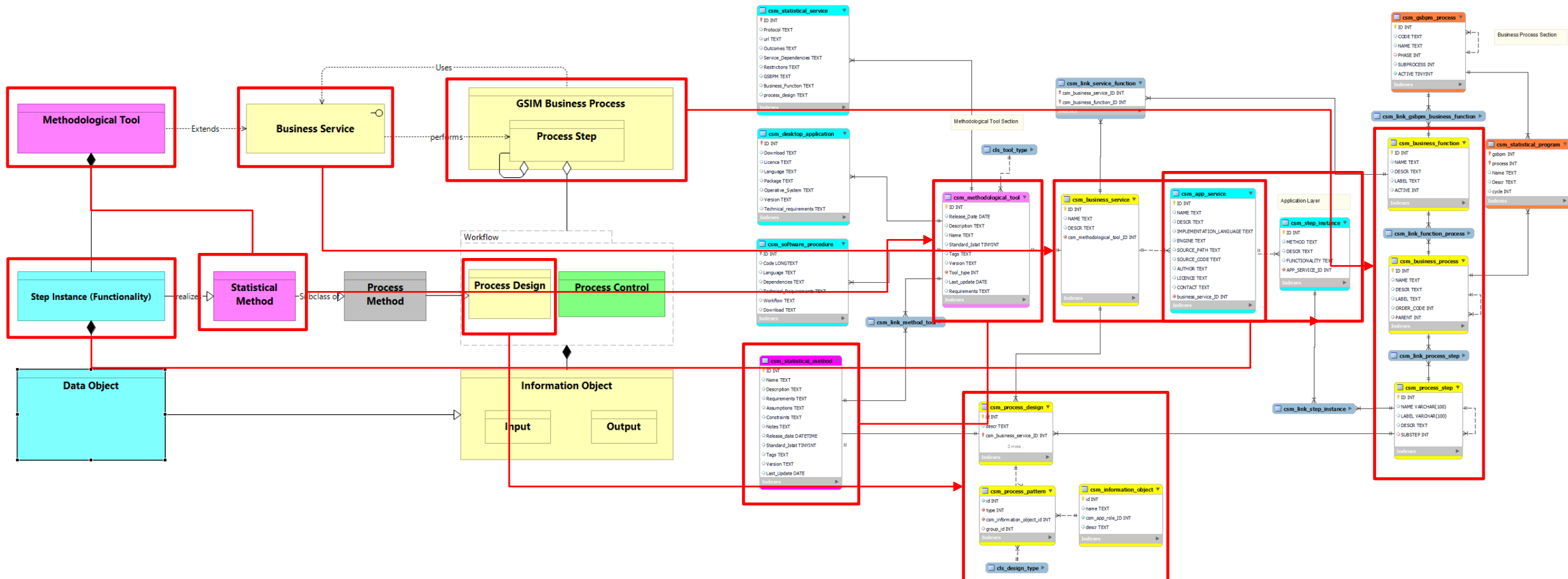
- ✓ Methodological Tool as Service provider
- ✓ Tool Design is separated into abstraction layers
- ✓ Business Layer describes the tool functionality in the context of Business Process
- ✓ Application Level describes details of actual implementation



Modelling the Business Process, Service and Tools 3/3

Methodological Tool Conceptual outline

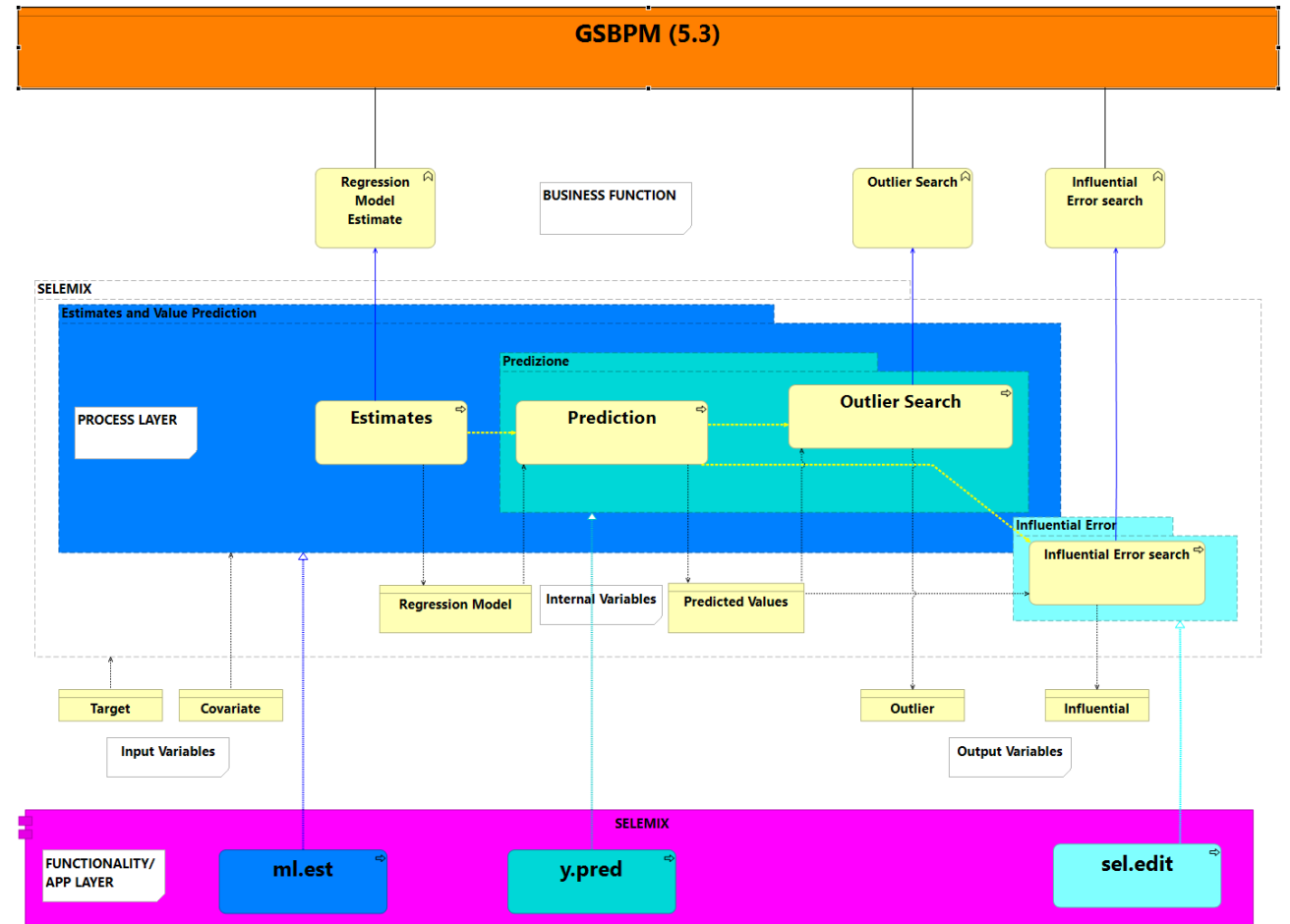
Methodological Tool and Business Layer Implementation



Example of Business Process implementation 1/2

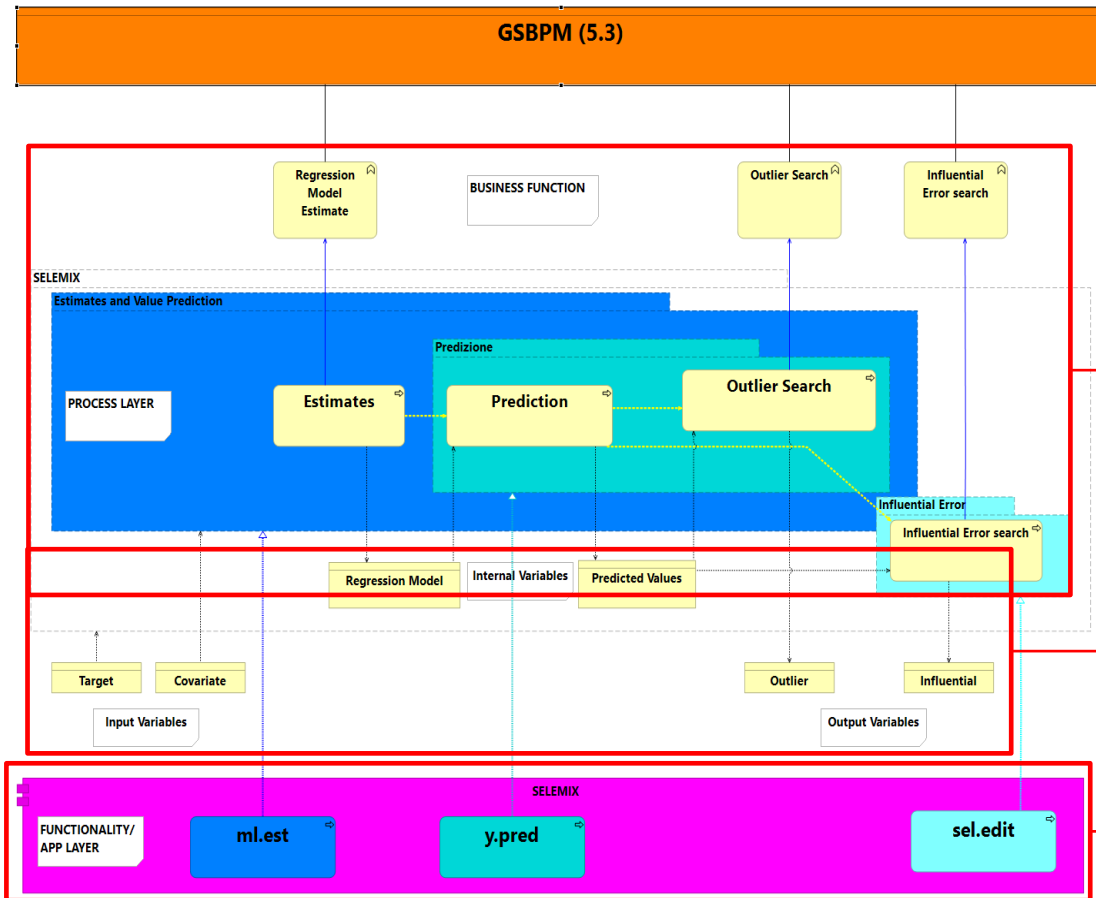
Use case Selemix R package

- ✓ Business Process in the upper level
- ✓ Objective function belong to GSBPM phases and sub processes
- ✓ Objective are realized by GSIM processes
- ✓ Processes are divided into steps (process flow is also outlined here)
- ✓ Steps are performed by functionalities (notice how functionalities implement both single steps and full processes)
- ✓ Process design describes I/O
- ✓ Functionalities are belonging to a Tool

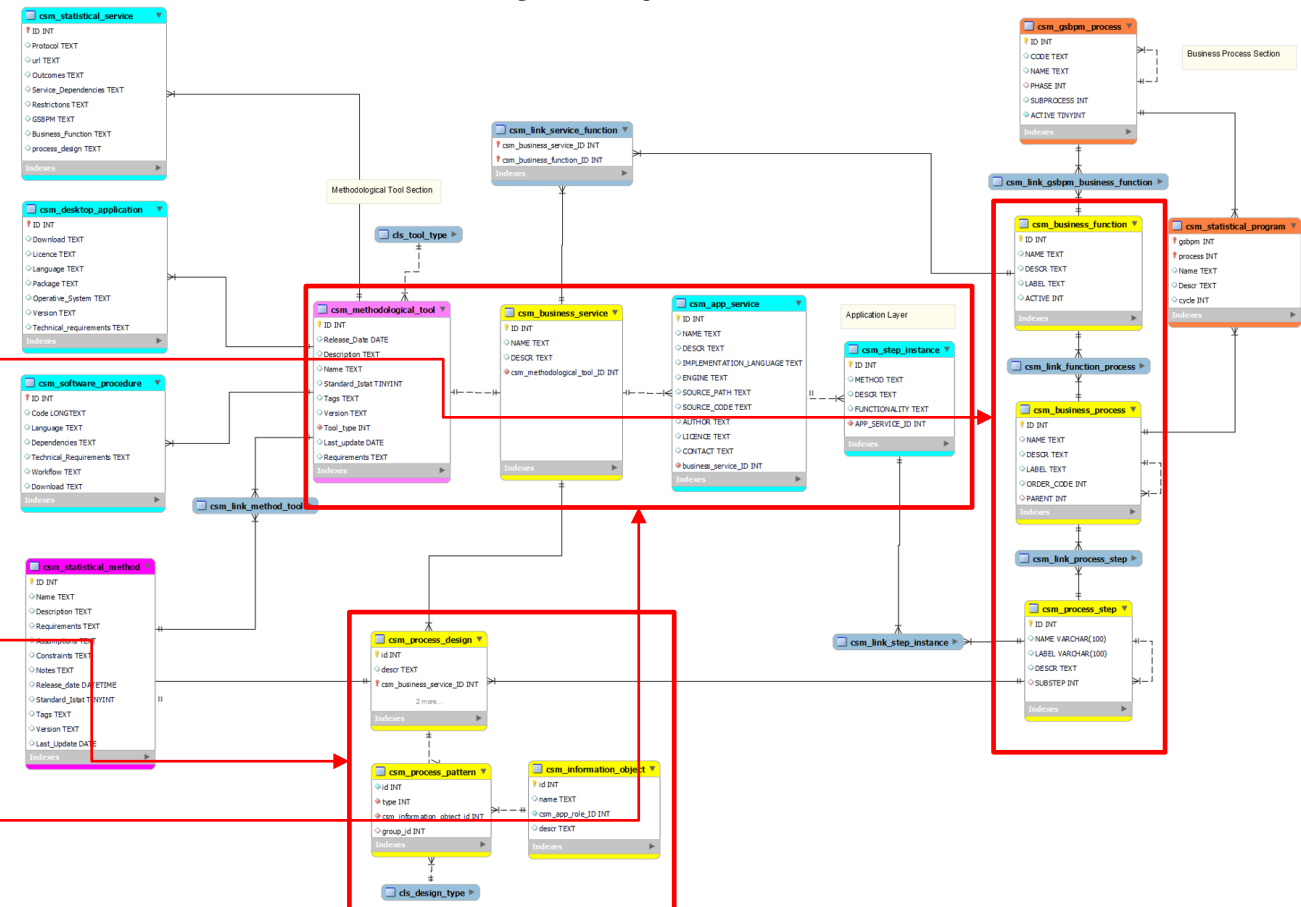


Example of Business Process implementation 2/2

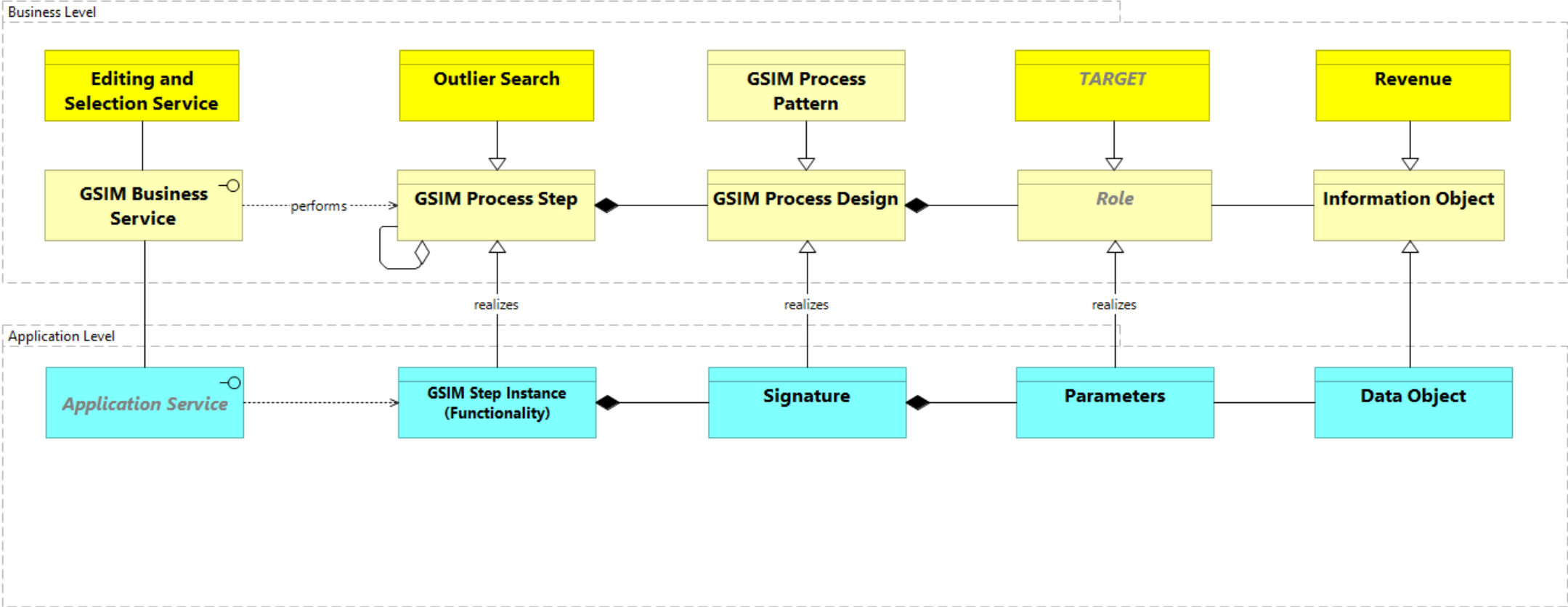
Process Design



Methodological Tool and Business Layer Implementation



Execution of Process Design and Functionality



Conclusions and lessons learned

The **Methods and Tools Catalog (MTC)** has the task of collecting information about the available tools and methodologies using the conceptual structure that was built from standard models integration. It supports process standardization using the common language of the statistical models.



Based on the compliance with the statistical standards, **MTC** can:

- ✓ Foster process restructuring, to avoid silos oriented design
- ✓ Standardize tool description and integration
- ✓ Help collecting information to transform tools into statistical services
- ✓ Be integrated with statistical services for direct service utilization

Thank you for your attention!

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